

**Abstract**

**CHARACTERIZING PROPERTIES OF A GEOLOGICAL  
FORMATION BY COUPLED ACOUSTIC AND  
ELECTROMAGNETIC MEASUREMENTS**

[00204] A method for characterizing a formation. The method comprises exciting the formation with an acoustic wave propagating into the formation. A seismo-electromagnetic signal produced by the acoustic wave within the formation is measured. The method further comprises exciting the formation with an electromagnetic exciting field. An electromagneto-seismic signal produced by the electromagnetic exciting field within the formation is measured. The measured seismo-electromagnetic signal and the measured electromagneto-seismic signal are analyzed to evaluate characterizing parameters of the formation.